

## CLAIM AMENDMENTS

1       1. (currently amended) A chemical sensor having  
2       comprising:  
3       a substrate;  
4       a first metallization plane arranged on [[a]] the  
5       substrate; (1) and in which  
6       an electrode structure (IDT) is formed in the first  
7       metallization plane,  
8       a passivation layer [[(6)]] applied to the first  
9       metallization plane and structured formed with contact holes,  
10      [[and]]  
11      a chemical-sensitive ceramic layer [[(9)]] on the  
12      passivation layer [[(6)]] and in the contact holes and capable of  
13      changing electrical properties when contacted by predetermined  
14      chemicals; and (7), characterized in that  
15      a bond-promoting layer (8) is provided which is  
16      configured as a second metallization plane and is located between  
17      the passivation layer [[(6)]] and the ceramic layer [[(9)]].

1       2. (currently amended) The chemical sensor according to  
2       claim 1 characterized in that wherein the second metallization  
3       plane is so applied that it comes to lie in the contact holes  
4       [[(7)]] upon the first metallization plane.

1           3. (currently amended) The chemical sensor according to  
2 claim 1, ~~characterized in that a further comprising~~  
3 ~~another~~ passivation layer (10) is located between the  
4 bond-promoting layer 8 and the ceramic layer [[(9)]] and so  
5 structured that the [[body]] bond-promoting layer [[(8)]] is  
6 partially passivated.

1           4. (currently amended) The chemical sensor according to  
2 claim 1 ~~characterized in that wherein two coplanar electrodes are~~  
3 ~~formed~~ in the electrode structure [[(IDT)]] of the first  
4 metallization plane, ~~two coplanar electrodes (IDT1, IDT2) are~~  
5 ~~formed~~ by structuring and the second metallization plane does not  
6 lie at a defined electrical potential.

1           5. (currently amended) The chemical sensor according to  
2 claim 1 ~~characterized in that wherein~~ the electrode structure  
3 [[(IDT )]] of the first metallization plane forms a first electrode  
4 [[(IDT1)]] and the second metallization plane is configured as a  
5 second electrode [[(IDT2)]] and lies at a defined electrical  
6 potential so that the sensitive ceramic layer [[(9)]] is provided  
7 with a vertical electrode.

1           6. (currently amended) The chemical sensor according to  
2 ~~claim 5 1 characterized in that wherein the first and second~~  
3 ~~electrodes [[(IDT 1, IDT 2)]] are configured as interdigitating~~  
4 ~~electrodes.~~

1           7. (currently amended) The chemical sensor according to  
2 ~~claim 1 characterized in that wherein a heating structure and a~~  
3 ~~temperature-measuring structure are formed in the first~~  
4 ~~metallization plane [[,]] in addition to the electrode structure~~  
5 ~~(IDT) a heating structure (4) and a temperature measuring structure~~  
6 ~~(5) are formed.~~

1           8. (currently amended) The chemical sensor according to  
2 ~~claim 7 1 characterized in that wherein the structures [[(4, 5,~~  
3 ~~IDT)]] of the first metallization plane are formed on the front~~  
4 ~~side of an Si-substrate [[(1)]] which has a membrane [[(3)]].~~

1           9. (currently amended) The chemical sensor according to  
2 ~~claim 1 characterized in that wherein the material for the second~~  
3 ~~metallization plane is Au, Cr/Au, Pt, Pd, W or Sn.~~

1           10. (currently amended) The chemical sensor according  
2 ~~to claim 1 characterized in that wherein the application of the~~  
3 ~~sensitive ceramic layer is effected by silk screening, dispenser~~  
4 ~~application or an ink jet process.~~